

Idaho Currents

City of Boise Completes Geothermal Loop

With a few turns of a valve on the cold morning of Jan. 18, the city of Boise completed its geothermal re-injection loop. Boise Mayor Dave Bieter and City Engineer Chuck Michelson changed the route of the water from its historic discharge into the Boise River near the Americana Bridge to the city's injection well located in Julia Davis Park.

"This accomplishment means that an additional 50 million gallons of spent geothermal water will be re-charging the aquifer system," says Ken Neely, technical hydrologist with the Idaho Department of Water Resources.

Neely is in charge of analyzing the monitoring data for the Boise Front Geothermal System. IDWR is responsible for ensuring that the Boise geothermal resources are protected from over-development.

"Monitoring is a key element to that protection," says Neely. "Each year a comprehensive report is published that documents the withdrawals and re-injections to the Boise system, and shows the latest trends in water levels and supply temperatures.

"The department's contributions are important for the future of this valuable resource," Neely adds. "Boise is already a model nationally and internationally for geothermal development and, with careful management, the resources will be sustained for the future."

Geothermal heating districts

The city of Boise is one of four district heating systems in Boise that uses the valuable geothermal resources underlying the downtown area to heat homes, businesses and public buildings. The city

system serves over 50 customers, including the Idaho Water Center, where the IDWR state office is located.

"The city's production wells are located along the toe of the foothills north of the Fort Boise area," says Neely. "Geothermal water from these wells begins its traverse through Boise with a temperature of 175 degrees F. Customers along the distribution line are encouraged to extract at least 50 degrees of heat from the water in order to achieve real cost savings over the expense of natural gas heating."

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Boise Mayor Dave Bieter, left, and City Engineer Chuck Michelson ceremoniously turn the valve to open the geothermal re-injection loop to the city's injection well in Julia Davis Park. (IDWR photo)

Energy Division Plans Builder Conference

This year's annual Idaho Builder Energy Conference, set for March 13 and 14 in Boise, will bring builders together to hear some of the leading industry professionals discuss insulation, air conditioners, heat pumps, and airflow design in energy-efficient homes.

The Idaho Energy Division, along with several co-sponsors, conducts a series of training workshops for builders who are interested in constructing Energy Star homes. Co-sponsors include Idaho Power Company, Northwest Energy Efficiency Alliance, and the U.S. Department of Housing and Urban Development (HUD).

This year's theme is "Sustainable Homes for a Sustainable Future." The two-day conference will feature several speakers, including Dr. Joe Lstiburek, one of the world's foremost authorities on energy-efficient construction techniques.

"More people are seeing the advantages of owning an Energy Star home constructed by builders who are Building Partners in Idaho," says Doug Plourde, energy specialist and Idaho Energy Star program manager.

"Several Energy Division programs are designed to provide technical assistance to Realtors, trade partners, builders, remodelers and homeowners throughout Idaho. Without these training programs, people would have to travel out of state to obtain certified training at a much greater expense," says Plourde.

Energy Star Homes

Homes that earn the Energy Star certification must meet guidelines for energy efficiency set by the U.S. Environmental Protection Agency. These qualified homes are at least 30 percent more energy efficient than homes built to the 2004 International Energy Conservation Code Supplement.

Energy Star qualified homes can include a variety of energy-efficient features, such as more effective insulation, high performance windows, tight con-

struction and air ducts, higher efficient heating and cooling equipment, and Energy Star qualified lighting and appliances.

These features contribute to improved homeowner comfort, health, safety, and durability, causing lower energy demand and reduced air pollution. Energy Star also encourages the use of compact fluorescent lights and energy-efficient appliances, as well as features designed to improve indoor air quality.

For more information on the conference, call the Idaho Energy Hotline, 1-800-334-SAVE, or contact Marla Loftis at marla.loftis@idwr.idaho.gov.

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Until early 1999, all the city's spent geothermal water was discharged into the Boise River. A re-injection well completed that year allowed about 75 percent of the water to be returned to the aquifer. However, the distribution line to the Boise River continued to operate until recently because a collection pipeline did not exist for the service area along the stretch from Capitol Boulevard to Americana Boulevard.

"Now that the pipeline has been completed, time will tell if the water levels respond to this additional re-injection to the Boise Geothermal Aquifer," says Neely. "Hopefully, the increase in water to the aquifer will result in a pattern similar to the one that occurred over the last eight years. Since re-injection began at the city's well in 1999, water levels in the geothermal system's primary monitoring well have risen about 20 feet."

The city of Boise is looking to the future for additional customers, including Boise State University. Currently, the supply line ends on the north side of the Boise River at the Capitol Boulevard bridge.

If negotiations between the city of Boise and BSU are successful, that supply line will be extended under the Boise River, and BSU will become a lot "greener" with the addition of a renewable energy source – geothermal.

Conference Focuses on Renewable Energy

If the attendance at a recent renewable energy conference is any proof, Idahoans support the use of renewable energy and alternative fuels in the state.

More than 625 people attended the 7th Harvesting Clean Energy Conference in Boise the last week of January. The conference was organized by Climate Solutions, an Olympia, Wash., nonprofit agency, and co-sponsored by the Energy Division.

Nearly 80 speakers from government agencies and private industry, along with farmers and ranchers, shared their experiences with renewable energy and alternative fuels during the two-day conference.

"We were impressed by the great interest and number of people who attended this conference," says Gerry Galinato, principal energy specialist with the Energy Division. "This is a good gauge on the importance of developing clean renewable and emerging energy technologies from rural communities in Idaho and the Northwest."

The conference provided a local forum to learn from renewable energy pioneers about what it takes to build and operate profitable projects. While there is tremendous potential for renewable energy development in Idaho, locating and utilizing the necessary technical expertise and the financial resources can be time consuming and discouraging.

More than a dozen breakout sessions covered a variety of topics, including tapping Idaho's geothermal potential and learning how Midwest farmers and rural communities are pooling resources to build wind projects and multi-million dollar biofuel plants.

"In Idaho we are increasingly seeing the nexus between energy and water, as evidenced by the many water-related topics at this excellent conference," says Dave Tuthill, interim director of the Idaho Department of Water resources. "It is fitting for these two important resources to be combined in our agency."



Governor Appoints Interim Director

David R. Tuthill was appointed Interim Director of the Idaho Department of Water Resources by Governor C.L. "Butch" Otter on Jan. 1, 2007. He succeeds Karl Dreher, who served as the director for 12 years.

Tuthill has worked for IDWR in several capacities since 1976. Positions include Adjudication Section supervisor, Payette Adjudication supervisor, Water Allocation Section supervisor, manager of IDWR's Western Regional Office, Adjudication Bureau chief, and Water Management Division administrator.

Tuthill has a Bachelor of Science degree in Agri. Engineering from Colorado State University, 1974; a Master of Science in Civil Engineering from University of Colorado, 1975; and a Ph.D. in Civil Engineering from the University of Idaho (Boise), 2002.

As Interim Director, Tuthill will serve until a new director is appointed by Gov. Otter.

State Recognizes Five Renewable Projects In Idaho

Five Idaho companies or their leaders were recognized for their contributions to using renewable energy resources in the state during a two-day conference in Boise in January.

Lt. Gov. James Risch presented the Idaho Governor's Renewable Energy awards during the 7th Annual Harvesting Clean Energy conference. Categories included geothermal production, solar electric, biomass, biofuels, and wind energy production.

Awards were presented to Rich Rayhill, vice president of Ridgeline Energy LLC; Rob Black, owner of Blue Sky Biodiesel; Jake Dustin, president of Intrepid Technology and Resources, Inc.; Kelly Murphey, superintendent of Castleford School District; and Daniel Kunz, president of U.S. Geothermal, Inc.

Rich Rayhill, Ridgeline Energy LLC

Rayhill was recognized for his vision, determination and persistence in laying the groundwork for the



Renewable Energy Awards were presented to Jake Dustin, Intrepid Technology and Resources (left); Rich Rayhill, Ridgeline Energy, LLC; Daniel Kunz, U.S. Geothermal; and Kelly Murphy, Castleford School District. Missing is Bob Black, Blue Sky Biodiesel. (Photo by Gerald Fleischman)

first commercial large scale wind project in Idaho. Ridgeline's wind farm now has 43 1.5-megawatt General Electric turbines on about 3,080 acres in Bingham and Bonneville counties.

According to Rocky Mountain Power, which buys the electricity under a 20-year power purchase contract, the plant supplies electricity to about 17,500 residences. The wind farm provides jobs, land-owner royalties, and roughly \$900,000 yearly in property taxes in these two counties.

Bob Black, Blue Sky Biodiesel

Black was recognized for overcoming all types of adversity to convert an old fruit packaging building in New Plymouth into Idaho's first biodiesel production plant. Blue Sky Biodiesel can produce 12 million gallons per year. As feedstock, the company uses soybean oil brought in from the Midwest, canola, or rapeseed oil, which is grown in Idaho.

Diesel vehicles can use 100 percent biodiesel or a mixture of various blends such as B20, a 20 percent vegetable oil and 80 percent gasoline diesel, without any conversion, and the emissions are cleaner. With Blue Sky Biodiesel, there is a possibility Idaho farmers can grow and market another cash crop, and the Treasure Valley's air will benefit as well.

Intrepid Technology and Resources, Inc.

Intrepid Technology and Resources, Inc., was recognized for its vision and leadership in developing and operating the first commercial-scale anaerobic digester that produces pipeline quality methane gas from dairy waste. The digester was installed at Whitesides Dairy in Rupert, produces the gas, which is purchased by Intermountain Gas Company.

The plant was so successful that an expansion is underway. When completed, the larger facility will process all the dairy waste from 4,500 cows and

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Energy Policy Institute Releases Survey Results

Idahoans believe county power plant siting responsibility should be shared with the state; agree with plan regarding more focus on renewable generation and conservation.

A survey conducted by the Energy Policy Institute (EPI) shows that more than 69 percent of Idahoans believe decisions regarding the siting of large power plans should be shared between both state and local officials, according to a press release issued by the Institute. Only 22 percent said the decision should remain with local officials either with no state involvement or with only state technical assistance.

This reflects a difference of opinion with the Interim Committee on Energy, Environment and Technology's recently released Draft Idaho Energy Plan. That plan recommends that siting authority should remain a local decision.

The EPI is part of the Center for Advanced Energy Studies, which was recently formed between Boise State University, University of Idaho, Idaho State University and the Idaho National Laboratory.

EPI conducted the survey as a way to gather public opinion on policies and issues discussed during the creation of the Legislature's recently released Draft Idaho Energy Plan. Questions included in the survey were developed while EPI's members attended the committee's meetings.

The survey included responses from 513 adults representing Idahoans at the state and regional levels. The survey has an error rate of about plus or minus 5.6 percent statewide.

Survey results

While the study does reflect differences of opinion relative to power plan siting, the survey also found areas of general agreement, such as the use of incentives. These include:

- 89 percent of Idahoans agree that incentives should be used to promote renewable electricity generation;
- 82 percent feel that incentives should be used to encourage Idahoans to purchase efficient,

flexible and alternative fuel vehicles;

- 89 percent agree that incentives are appropriate to promote investment in non-traditional natural gas supply resources, such as landfill and feedstock waste;
- 90 percent support incentives to promote local production of ethanol and biodiesel using Idaho-grown crops;
- 88 percent would promote a shift toward using alternative fuels for transportation.

On policies regarding local issues dealing with transportation, 85 percent of Idahoans concur that local authorization to option taxes for public transportation should be allowed. About 69 percent also agree with the recommendation to encourage land use planning and policies that reduce the amount of driving required by Idahoans.

Idahoans also agreed with the Energy Plan regarding the use of conservation and efficiency targets, with 74 percent of respondents indicating that mandatory or voluntary targets should be set for utilities. If targets are set, 77 percent believe that a combination of penalties and rewards should be used to enforce target achievement (as opposed to the use of penalties alone, at 5 percent, or rewards alone, at 13 percent).

However, Idahoans disagree with the interim committee's recommendation to asset renewable energy targets (referred to as renewable portfolio standards). About 84 percent feel that mandatory or voluntary targets should be set for utilities.

While the interim committee recommended that standards not be set, about 77 percent of Idahoans feel that if targets are set, a combination of penalties and rewards should be used in target achievement (about 16 percent favored rewards only and 4 percent favored penalties only).

The survey also included several questions discussed during committee meetings but not included in the Draft Energy Plan. When asked about low-income assistance, about 67 percent of Idahoans said that it is important for the state to take action to

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provide gas energy for roughly 5,000 homes in the Magic Valley.

Castleford School District

This small, progressive school district was recognized for its unflagging interest, tenacity and dedication that led to the installation and operation of the first known solar electric system on any public school in Idaho.

It was also the only school to have this type of system in the state until 2006, when five other schools in Idaho Power Company's service area added solar panels on their grounds as part of the Solar 4R Schools program.

U.S. Geothermal, Inc.

U.S. Geothermal, Inc., was recognized for its ability to foresee the potential at the Raft River geothermal site and the company's dedication and willingness to take risks to develop the first commercial geothermal power production facility in Idaho.

U.S. Geothermal purchased the mothballed U.S. Department of Energy geothermal site near Raft River and leased other nearby land. The site has recorded water temperatures ranging between 275 degrees F to 295 degrees F between 4,500 feet and 6,000 feet below the land surface. GeothermEx, Inc., a leading geothermal consulting firm, has estimated that the site is capable of producing up to 90 megawatts of power.

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help low-income residents pay for high winter heating bills.

Given the 13-year waiting list for low-income Idahoans to receive weatherization services, about 70 percent of survey respondents felt the state should take action to reduce the waiting list.

John Freemuth, interim director of the EPI, led the study. Other results, such as regional and demographic analyses, are available upon request. To receive a copy of the survey highlights, call Mike Louis at 208-426-1463, or download the report at <http://ppa.boisestate.edu/ssrc>.

Editor's note: Information for this article was obtained from a press release written by the Energy Policy Institute. The Draft Energy Plan is available at:

<http://www.legislature.idaho.gov/sessioninfo/2007/energy_plan_0126.pdf>